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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,587	12/28/2001	Guy L. Steele JR.	6502.0369	2874

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Washington, DC 20005-3315

EXAMINER

MAI, TAN V

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,587

Applicant(s)

STEELE, GUY L.

Examiner

Tan V Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/27 & 11/19/02, 1/15/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-47 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/27 & 11/19/02, 1/15/03</u> | 6) <input type="checkbox"/> Other: _____ |

1. The abstract of the disclosure is objected to because superfluous language and legal phraseology are used in this paragraph (i.e., "[a]n embodiment of the invention" and "comprising"). Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:

In the specification, pages 2 and 14; the status of Co-pending Application(s) Serial No. _____ is required to be kept current.

Appropriate correction is required.

3. The drawings are objected to because the label "10" (see Page 14, paragraph [0046], "accumulation circuit 10") is missing in Fig. 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite a method for performing a mathematical function. The claimed invention comprises a plurality of mental steps whereby the claimed mental steps are

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non-statutory subject matter. Specifically, the claimed method steps can be practiced mentally in conjunction with pen and paper.

However, in order for such a claimed computer-related process to be statutory, the method claims must include either a step that results: (1) in a physical transformation outside the computer, (2) in a limitation to a practical application, or (3) performed specific machine/element(s). Accordingly, claims 18-32 are clearly directed to a non-statutory process.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 5-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al (Applicant's admission Prior Art).

As per independent claim 1, Huang et al disclose, e.g., see **Fig. 4**, the invention, **arithmetic calculation circuit (100)**, substantially as claimed, including: **X and Y operand registers 116 & 118; arithmetic section 114 and special operand generator 122**. It is noted that Huang et al do not specifically detail the claimed "analyzer circuit that receives a plurality of operands each of which having **encoded status flag** information". However, Huang et al do disclose X and Y operand registers each includes a **special operand indicator** which is stored a special operand of a

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predetermine set of special operands. Therefore, the Huang et al's feature is equivalent to the claimed **"encoded status flag"** information". It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Huang et al's teachings because the device is an **arithmetic calculation circuit (100)** having **special operand indicator** in each operand register which is considered the claimed **"encoded status flag"** information" as claimed.

As per dependent claim 2, the claim adds "wherein at least one of the plurality of operands is a floating point operand". Huang et al's device is a floating point device.

As per dependent claim 3, the claim adds "further comprising one or more **operand buffers**. The "operand buffer" feature is obvious to a person having ordinary skill in the art for temporary storing desired data.

As per dependent claims 5-14 and 17, the claims add the detail "formats", "flags", "status". These features are well known formats in special floating point number.

As per dependent claim 15, the claim adds "wherein the accumulated result represents information from one of the plurality of operands that has a larger fraction field". The feature is obvious to a person having ordinary skill in the art.

As per dependent claim 16, the claim adds "wherein the a sign bit in the accumulated result is a logical OR of sign bits in the plurality of operands". The feature is obvious to a person having ordinary skill in the art.

Due to the similarity of claims 18-47 to claims 1-3 and 5-17, they are rejected under a similar rationale.

7. Claims 1-3 and 5-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch et al (Applicant's admission Prior Art).

As per independent claim 1, Lynch et al disclose, e.g., see **Fig. 4**, the invention, **floating point unit (36)**, substantially as claimed, including: **Register Stack (84)** and **FPU Core (94)**. It is noted that Lynch et al do not specifically detail the claimed "analyzer circuit that receives a plurality of operands each of which having **encoded status flag** information". However, Lynch et al do disclose the equivalent function, e.g., see Abstract, "[b]y appending tag values to each floating point number, the floating point unit can quickly determine which floating point numbers are special floating point numbers and the type of special floating point number". It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Lynch et al's teachings because the device is a **floating point unit (36)** having the "determine which floating point numbers are special floating point numbers and the type of special floating point number" as claimed.

As per dependent claim 2, the claim adds "wherein at least one of the plurality of operands is a floating point operand". Lynch et al's device is a floating point device.

As per dependent claim 3, the claim adds "further comprising one or more **operand buffers**". The "operand buffer" feature is obvious to a person having ordinary skill in the art for temporary storing desired data.

As per dependent claims 5-14 and 17, the claims add the detail "formats", "flags", "status". These features are well known formats in special floating point number.

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As per dependent claim 15, the claim adds "wherein the accumulated result represents information from one of the plurality of operands that has a larger fraction field". The feature is obvious to a person having ordinary skill in the art.

As per dependent claim 16, the claim adds "wherein the a sign bit in the accumulated result is a logical OR of sign bits in the plurality of operands". The feature is obvious to a person having ordinary skill in the art.

Due to the similarity of claims 18-47 to claims 1-3 and 5-17, they are rejected under a similar rationale.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

9. The following is an examiner's statement of reasons for allowance: the recorded references do NOT teach or suggest the "decision circuit" feature as recited in dependent claim 4.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761.

The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is:

Official (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI
PRIMARY EXAMINER